Prairie Restoration

Lacey Kirchner

Elementary Ed.

Climax Molybdenum, Ft. Madison

Part I: Overview of Business

Climax Molybdenum Company, is located outside of Ft. Madison, Iowa and is a subsidiary of Freeport-McMoRan. The Ft. Madison facility is the world's largest producer of lubricant grade molybdenum disulfide, sublimed pure molybdic oxide, calcined pure molybdic oxide, ammonium dimolybdate, ammonium heptamolybdate, ammonium octamolybdate, and sodium molybdate. While molybdenum products are primarily used to improve mechanical and physical properties of steels, Climax Molybdenum produces chemical products. Those products have several applications such as: catalysts, metal products (Sinter), lubricants, corrosion inhibitors, smoke suppressants, and pigments.

Part II: Job Specifics

- This role focuses on restoring, improving, and/or maintaining environmental health. Climax is focused on reducing their environmental footprint and having a positive impact whenever possible.
- Determining where environmental improvement is needed and how to go about such improvements, in this case, prairie restoration.

Part III: Introduce the Problem

- Climax Molydbenum manages a large prarie in their permitted landfill area.
- Environmental scientists have noticed a lack of forb diversity in the prairie which is necessary for specific pollinators to thrive.
- The students job is to determine how to adequately sample the space to plant populations, and then develop a plan for restoration.

Part IV: Background

- Students need basic math skills such as the ability to figure proportions, percentages, averages, and area.
- Students will need to research prairie plants native to Iowa, how to manage the prairie for optimal growth, and appropriate sample size for determining population.

Part V: Business Solution

- The solution to this problem involves several steps. The first was to determine plant populations. Climax invited a local boyscout group to help with this. A random sample or transect (will be) completed, and data will be analyzed to determine where diversity needs to be increased.
- Next, Climax will take several steps over the next few years to work on restoring the praire. Controlled burns and mowing will take place during specific times of the year. Wildflowers will be introduced to encourage pollinators, as well.

Part VI: Student Solutions

- Students should be able to figure a percentage of land that is feasible to sample. From there they can determine how to take that number and estimate it for the entire plot.
- Students can develop a plan or process to restore the prairie through research.
- Students can determine which plants are best for pollinators, when to plant for maximum growth, and/or how to manage.